

REMARKS

Claims 17-19, 21, 22 and 29-33 are pending. Claims 17-19, 21 and 22 stand withdrawn. Claims 29-34 have been rejected. Claim 34 has been canceled. Applicants renew their request rejoinder of claims 17-19, 21 and 22 upon allowance of independent claim 29. No new claim has been added. Entry and reconsideration are requested.

Response to Rejections under 35 USC § 103

Claims 29- 34 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Esser (U.S. Patent No. 6,096,040) in view of Bailey (U.S. Patent No. 5,607,430). Applicants traverse the rejection for reasons stated below.

Claim 29 in-part recites;

29. (Currently Amended) An implant plate for stabilizing a fracture, comprising:

a plate member having an edge defining a head-end portion shaped to bear against a surface of a bone and a shaft-end portion shaped to bear against a surface of a bone, the head-end portion edge including opposite side edge sections, the shaft-end portion being narrower along a lateral direction than the head-end portion, and the plate member edge delineating a bone facing surface to bear against the bone and an opposing side surface facing away from the bone;

* * *

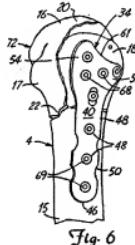
discrete receiving members protruding from said opposing side surface, located at the head-end portion and proximate to at least each side edge section [the edge], each member defining a substantially circular and circumferentially enclosed aperture through which flexible members may be passed through and tightened after the plate member has been secured to the bone surfaces, an edge circumference of each aperture having a distal curved section spaced further from said opposing side surface than a proximal curve section.

Amended claim 29 now provides that the plate have opposite edge sections at the head-end portion, and the “discrete receiving members” on the “head-end portion” are arranged at the opposite edge sections.

The Examiner concedes that the Esser patent, which discloses bone plates, *does not teach or suggest the “discrete receiving member” required by claim 29, its location and configuration:*

... Esser does not disclose at least one discrete receiving member protruding from the opposing side surface, located at the head-end portion, and proximate to the edge, each member defining a substantially circular and circumferentially enclosed aperture through which flexible members may be passed through and tightened after the plate member has been secured to the bone surfaces, an edge circumference of each aperture having a distal curved section spaced further from the opposing side surface than a proximal curve section (Office Action at 4)

However, there is another deficiency. Esser does not teach the claimed “head-end portion.” As previously argued by Applicants, the Esser patent discloses a humerus bone plate that includes an elongated shaft section 32 and an enlarged “complex geometry” head section 34 that would respectively engage humerus shaft 15 and humerus head 4 (6/38-55).¹ See below:



Esser contemplates other designs, illustrated below.

Fig. 9

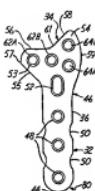


Fig. 10

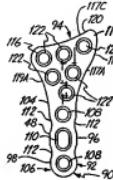


Fig. 13

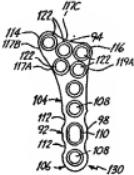
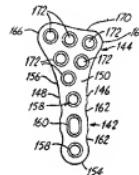


Fig. 16



In each case the bone plate has an enlarged head section designed to engage the head of a bone and a narrower shaft section to engage the bone shaft. Esser does not have a head portion with opposite, similar, edge sections.

The head sections disclosed by Esser are unsymmetrical and specifically designed to have a complex geometry (Abstract):

The head portion includes a first head section (53) and a second head section (54), with an obtuse angle defined therebetween. The first and second head sections (53, 54) extend laterally away from a longitudinal axis of the shaft portion (32) in generally opposite directions. The second head section (54) is configured and arranged with lateral portion (86) to secure multiple fractures of a head of proximal humerus while extending laterally adjacent to the biceps tendon to preserve the tendon. First head section (53) forms an angled gap (61) relative to second head section (54) to avoiding impingement of the acromion process of the shoulder.

The Examiner relies on the Bailey patent as teaching the use of bosses for "flexible" wire:

Bailey does teach at least one discrete receiving member protruding from the opposing side surface (Figure 1, 18 "bosses"), located at the head-end portion, and proximate to the edge, each member defining a substantially circular and circumferentially enclosed aperture

(embodiment in Figure 7) through which flexible members may be passed through and tightened after the plate member has been secured to the bone surfaces (Column 4, lines 6-23), an edge circumference of each aperture having a distal curved section spaced further from the opposing side surface than a proximal curve section (Figure 3,22 “openings”).

The Examiner concludes,

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the “bosses” for holding a cable in place to further secure a bone plate as disclosed in Bailey with the shape and configuration of the bone plate for use with long bones as disclosed in Esser. The adaption of bosses to hold cabling and further secure a bone plate is applicable to any bone plate where additional fastening would be beneficial (Office Action at 4-5).

As previously discussed, the Bailey patent does not appear to support the modification suggested by the Examiner. Bailey discloses it is desirable to make bosses 18 (or bosses 518 / 618) an integral part of the plate (5/14-16). The bosses extend laterally across the longitudinal axis of the plate and are designed to make sure the wire is in continuous surface contact with the plate (5/8-13):

It has been found that by providing a continuous cable contact surface, the stresses in cable 21 are more evenly distributed throughout the cable rather than being concentrated at certain points. This stress distribution strategy is further accomplished by contouring the outer surface 14 so that it is tangent to the cylindrical surface defining holes 22 at its ends 24.

Each boss 18 of Bailey includes holes 22, 122 "at its ends" that respectively open proximal to oppositely arranged plate edges. Bailey illustrates bosses 18 alternate with a series of longitudinally positioned fasteners. For example, Figure 1 appears to illustrate a bone plate of uniform width dimension that is juxtaposed against a bone shaft. With respect to Figures 10 and 11, bosses 518 / 618 are only located on the shaft portion of the plate.

Fig 1.

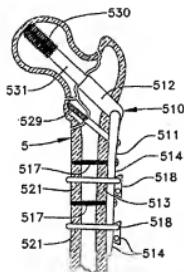


Fig. 10

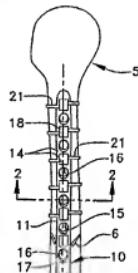
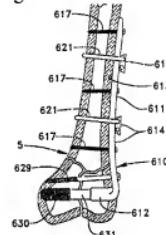


Fig. 11



One of ordinary skill in the art would understand that such an arrangement provides fastening along a single longitudinal axis. According to Bailey, the use of a series of alternating bosses and fasteners where wires extend laterally across the narrow plate allegedly obviate micro motion problems.

However, one of ordinary skill in the art would also understand that the micro motion issues Bailey encounters result from the plate's configuration coupled with the in-line fasteners along the longitudinal axis. Bailey does not provide lateral fasteners.

In contrast, the head-portion of Esser's plate is wider than the shaft portion. The complex enlarged head configuration, coupled with laterally spaced fasteners, as well as longitudinally arranged fasteners in the head portion, should not present the micro motion problems

associated with the in-line fasteners of Bailey's narrow, uniformly configured shaft plate. Thus, irrespective of what the prior art may teach, Esser's plate design would discourage the need or desire for those features on the enlarged head portion of the plate. In re Icon Health & Fitness, Inc., 496 F.3d 1374, 1381 (Fed. Cir. 2007) ("A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant;" citing In re Gurley, 27 F.3d 551, 553 (Fed. Cir. 1994); See KSR Int'l Co. v. Teleflex Inc. et al., 127 S.Ct. 1727, 1740 (April 30, 2007) (explaining that when the prior art teaches away from a combination, that combination is more likely to be nonobvious).

The Examiner opines the use of more than one type of fixation system at a time is known, and providing additional fixation, if Esser's system fail, would be helpful. However, the Examiner does not provide any technical reasons for this speculative failure, especially at the head section. In addition, "[a] patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art," KSR at 1741. In addition, the bosses of Bailey are not the discrete members of claim 29 nor are they arranged as recited in Applicants' claimed invention.

Conclusion

For reasons given above, claims 29, 31-32 and 33 are submitted to be patentable over the cited prior art, and the rejection should be withdrawn. Claims 30 and 33 both depend from claim 29, and are allowable for the same reasons. Accordingly, in view of the above amendments, Applicants submit that the present application is in condition for allowance.

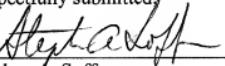
Authorization

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1073, under Order No. A8130.0659/P659

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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